14:International Bank S-5 (1954) 1955 MD1 Syria MD1

maturing varieties to replace the praecox strains currently used. The high day and comparatively low night temperatures in Syria are more suitable to slow-maturing rice varieties. For maize it is especially important to test and select appropriate hybrid strains. In Syria maize yields are only about 1.3 tons per hectare while in the United States hybrid maize yields about 4.4 tons. With the introduction of high-yielding hybrid strains, the production of maize should definitely be encouraged since it fits well into the crop rotation scheme, is rather heat resistant and can provide not only grain but also fodder and silage.

Once suitable seed strains have been selected by testing, arrangements should be made with farmers in various parts of Syria for the propagation of such strains under proper supervision. These farms could serve at the same time as demonstration centers. The seed thus propagated should be certified and made available for distribution through licensed dealers, cooperatives and Chambers of Agriculture.

Cotton[13]

The government already has a praiseworthy program for the improvement of cotton cultivation. The disastrous failure of the cotton harvest in 1951, caused by the rather reckless expansion of cotton acreage and an uncontrolled invasion of destructive insects, brought in its train a number of corrective measures. The government regulated cotton acreage by licensing, and specified the time of planting. Controls over the treatment and distribution of seed were established. Even dusting and spraying were prescribed in 1952. Variety tests have also been conducted, and as a result Coker Wilt, a high-yielding strain, is now predominantly cultivated in Syria. A Cotton Office, staffed largely with Egyptian experts, has been charged with the improvement of cotton production. This entire program should be further expanded as more Syrian technical personnel become available. The mission suggests, for instance, that a special station be established for cotton breeding and insect control. More attention should be paid to cultural practices. Yields can be raised by reducing the danger of pests through rigorous cleaning of cotton fields following the harvest and destruction of host plants; by closer planting to discourage excessive vegetative growth and to promote earlier maturity; and by applying fertilizers at appropriate times.

[13] See Annex C, p. 305.

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ing types. Release to selected seed producers of promising types tested during at least three years.

4th year: Continuation of yield tests. Growing of F. generation hybrids. Retesting of seed released the previous year to seed growers. Seed rejuvenation of older material. Establishment of priority standards.

5th and following years: Comparative yield tests of the best varieties, including hybrids. Evaluation of hybrids.

A committee for seed production composed of representatives of the Ministry of Agriculture and accredited seed growers should be established to promote a certified seed program. The FAO should be invited to assist this committee. The committee would designate desirable varieties for the various regions, advise on seed imports and designate the standard for certified seed. The Ministry of Agriculture should set up an appropriate organization to certify and distribute seed to accredited traders on a non-profit, non-loss basis, and to grant premiums for the best seed grown. Proper supervision of seed farms through field inspectors will be necessary to safeguard against the admixture of impure or other seed both in the field and in the process of threshing and cleaning.

Following experimental seed testing, the stages would be:

1. Transfer of seed to the extension service for multiplication under its direct supervision and control. Some of the present experimental stations could serve as propagating centers.

2. Allocation of registered seeds among seed-growing districts and seed growers in accordance with their interest in particular strains.

3. Selection by field officers (extension agents) of experienced farmers whose land would serve as demonstration plots for the nucleus seed.

4. Drawing up of contracts by the Ministry of Agriculture with accredited seed growers to harvest the seed and return it at premium rates (establishment of certified seed growers). This seed, having been tested and labelled, would then become certified government stock seed.

III COTTON

The legislation relating to cotton production is adequate and marked a great step forward. The government should, however, enforce the prohibition against planting in areas where climatic conditions make such planting

14:International Bank S-5 (1954) 1955 MD1 Syria MD1

hazardous; apparently many farmers still disregard the legislation and plant in dry-farming areas, frequently with unfortunate results. Effective enforcement requires sufficient enforcement personnel, and, equally important, enough qualified extension agents to convince the farmer that the legislation is to his benefit. Even in other countries well suited to cotton growing, risks have been overcome only through year-long practical education and guidance by field extension agents capable of translating research findings into readily understandable terms.

In addition, the establishment of associations of cotton growers could do much to further the education of their members, help execute the various decrees, and act as liaison between farmers and government. Credits to facilitate seed purchase can be obtained under general rules of the Agricultural Bank. Loans for the acquisition of insecticides (cotton dust) are authorized by law.

The cultivation of cotton has gone a long way by empirical experimentation with native varieties and American and Egyptian strains; annual production is now estimated at over 50,000 tons of cotton fiber and about 100,000 tons of cotton seed or 150,000 tons of seed cotton, worth about £S 150 million.[5]

The availability of fertile soil and favorable climatic conditions augurs well for further development of production. With steadily increasing interest on the part of government and private individuals, cotton may well become an even more valuable crop and contribute increasingly to Syria's foreign exchange income. We therefore recommend continuation of serious efforts toward quality and quantity improvement. It is suggested that better hand tools, such as hand drillers, be used, and that technical advice to farmers be extended on an expanded scale.

More specifically, we recommend:

1. *Cultivation.*

a. Seeding. April to May, depending on the weather and region. The seedbed should be thoroughly worked, if done manually, by plowing

[5]Exports of cotton, cotton seed, etc., in 1953, were as follows:

	Tons	Million £S
Raw cotton	53,946	134.703
Cotton waste and lint	424	.261
Cotton seed	28,418	5.506
Cotton seed oil	1,223	1.414

SOURCE: Statistical Abstracts.

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two to three times. Seeding of only first class seed; not more than four seeds per hole.

b. Spacing. 25 x 60 cm. or a rate of about 120,000 to 150,000 plants per hectare. This helps early maturity, whereas wide spacing leads to heavier vegetative growth, late maturity and consequent exposure to bollworm.

c. Watering. If irrigated, watering immediately following sowing, repeated every 10-15 days till about 80% of the bolls are formed.

d. Fertilization. Distribution of fertilizers at cost to a selected group of farmers whose farms could serve for demonstration purposes.

2. *Control measures.* The previous year's cotton stalks should be rigorously removed and host plants destroyed. Posters showing the life cycles of the various insects and host plants should be distributed. Plant entomologists should regularly inspect the cotton fields in plague-infested regions in order to direct an effective campaign. Dusting or spraying with more effective, less expensive insecticides or by mechanical equipment on a cooperative basis should be instituted. Progressive farmers should be asked to make large-scale weedicide tests, subject to compensation in case damage is done. Premiums should be introduced for the best cotton growers.

3. *Establishment of a seed propagating station.* At present the government does not have adequate technical staff to direct and operate an effective up-to-date seed propagating station. The mission recommends that existing propagating facilities be greatly expanded, along the following lines:

1st year: Extension of seed propagating efforts under the direction of foreign experts already engaged; training of four Syrian agronomists to continue the seed propagation work in the three typical cotton regions of Aleppo, Jezireh and Euphrates.

2nd year: Continuation of seed propagation and selection of strains best adapted to the various regions; initiation of permanent field experiments; establishment of a demonstration farm in each region to specialize in seed material, insect control and weed control.

3rd year: Continuation of seed propagation with permanent agencies in the three main regions and demonstration farms serving as training centers for extension agents.

4th and 5th years: Establishment of an experimental station for cotton breeding, control of plant diseases and insect and pest control.

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248 4. *Gradual reduction of cotton cultivation in dry-farming areas.* Cotton growing under dry-farming conditions is too hazardous in Syria.

5. *Selection of cotton growing areas and permanent restriction to these regions.*

6. *Rotation plan.* Introduction of rotation without the customary fallow, e.g.:

1st year: cotton, green fodder mixed with barley; or cotton, wheat.

2nd year: maize, sorghum, green manure; or wheat, fodder crops.

3rd year: early peanuts, wheat mixed with leguminous plants or horse-beans; sorghum.

7. *Establishment of cotton grower associations.*

249 IV SUGAR BEET

In 1953-54 the cultivated area, mainly around Homs and Damascus, amounted to 4,200 hectares of irrigated land and about 2,000 hectares of rainfed land, generally divided into small plots of a few hectares and worked manually. The price of £S 60 per ton of beets delivered at the Homs factory makes cultivation very attractive, even to farmers at some distance from the factory and despite high labor costs. Maximum transport cost from producer to factory was, at the time of the mission's visit, £S 9 per ton. Seeds from Holland and Germany were provided without cost by the Sugar and Agricultural Products Company until 1953; since then the farmer has had to meet half of the cost of £S 117 per kg. Some farmers are thus inclined to produce their own seed, although ideally this should be undertaken only by experts.

The mission makes the following recommendations with respect to sugar beet:

1. Expansion of production should be sought mainly in irrigated areas. Careful account should be taken of all planting and climatic conditions since they directly affect sugar content; hot days and cool nights are a favorable influence.

2. The selection and development of an early-maturing type adaptable to Syrian conditions should be considered.

3. Sugar beet growing in rainfed regions with less than 600 mm. rainfall should be transferred to partly or fully irrigated land. It can rely on the abundant late winter and spring rains for partial irrigation.

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433 is still responsible for an important part of, and in some instances for the entire, production. Yet the use of power-driven machines is steadily growing and it is not unusual to find an expensive modern machine in a workshop with only five or six employees. This development will probably be accelerated as more and cheaper electrical power becomes available, but it is equally likely that some Syrian industry, although to a steadily decreasing extent, will remain in the handicraft stage for many years to come. This applies particularly to village industries (dairy products, dried fruits, rugs, etc.), which employ a considerable percentage of those who gain a living from some industrial occupation.[1]

Cotton Ginning

● 248 Ginning is a relatively new industry which sprang up after local cotton cultivation became prominent, and by 1953 was employing about 4,000 workers. The sharp rise in cotton production after World War II led to a rapid expansion of ginning capacity and, in 1950, to the introduction of some saw gins. There are now over 100 establishments, mostly in Aleppo, which concentrate on cotton ginning during the season commencing in September and ending in April or May.

According to the latest available estimates Syria has a total of about 1,750 roller gins and 64 saw gins with a lint capacity of 45-48 metric tons per hour. A report issued in September 1953 states that of the 1952-53 cotton crop of 176,000 tons of raw cotton, over 90% was roller-ginned and that saw gins were only used in the lower grades. Up to 10,000 tons of ginned cotton were used in Syrian textile mills; the remainder (about 50,000 tons) was exported.

The importation of cotton ginning machinery was prohibited by law in 1952; it is generally agreed that present ginning capacity is sufficient to deal with any anticipated increase in the crop for some time to come.

Textiles

258 *Spinning and weaving.* The manufacture of textiles is Syria's principal industry. Six spinning and weaving factories now produce cotton and

[1] According to a study dated February 24, 1954 by Dr. Abdel Monthleb Boukari, "L'Artisanat Rural Traditionnel," 18% of the Syrian population is engaged in some kind of manufacturing industry of which 9.8% is in town industries and 8.2% in village industries. The mission was not in a position to check these figures.

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Textiles

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The entire output of yarn is spun in the large factories but almost half the cloth produced is woven on hand looms.[2] It is estimated that on a basis of 1.3 KWH per kilogram for spinning and 1.0 KWH per kilogram for weaving, the total power requirements of mechanized textile plants approximate 21.1 million KWH annually.

Most of the large factories (with one important exception) generate their own power from their total installed capacities of 2,200 KW in Damascus and 2,500 KW in Aleppo. This is more than adequate for the demands of the larger spinning and weaving factories, estimated at 15.8 million KWH, though some plants do in fact purchase some power—to the extent of about 2.6 million KWH—from the public utilities network. On the assumption that the power used by the small factories is drawn wholly from municipal supplies, the total power consumption of 21.1 million KWH for textile spinning and weaving is furnished by private plants to the extent of 13.2 million KWH, and by the public utilities to the extent of 7.9 million KWH. The 6.6 thousand tons of cloth at present woven on hand looms may be regarded as a potential power demand for 6.6 million KWH from the public utilities, giving an aggregate potential demand by textiles for a minimum of 27.7 million KWH, of which 14.5 million KWH would be supplied by the public utilities.

It is expected that the textile industry will continue to expand, though possibly at a slower rate, requiring about 2 million additional KWH by 1960.

Ginning

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In 1953 about 50,000 tons of lint were produced and ginned in Syria. With an average power consumption of 100 KWH per ton of cotton ginned and baled, this would require about 5 million KWH.

Four-fifths of the gins are located in Aleppo, the remainder being in Homs, Idlib, Latakia and Damascus. The most important ginning factory in Aleppo has its own power plant with a capacity of 1,500 KW, but the majority of the other plants have recourse to the public network. It can be assumed that about half the total required power is supplied by private plants and half by the public utilities.

[2] 1952 production: yarn, 9,000–10,000 tons; cloth, 14,000–15,000 tons.

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An increase of about 60% in cotton production is expected by 1960, but present power capacity appears adequate to meet this expansion. 377 214

Glass

The Damascus glass factory owns a 600-KW power plant. The total productive capacity of the factory is about 43 tons of glass per day; in 1953 about 3,000 tons of glass were actually produced, representing about 70 days output at full capacity. If a consumption of about 100 KWH per ton of glass is assumed then the generated power in 1953 would have been about 0.3 million KWH. 377 323

Cold Storage

A cold storage plant in Damascus has a 500-KW power plant interconnected with the public utilities network. It can be assumed that about half of the approximately 2 million KWH required annually is supplied by the public utilities and half by the factory's plant. 377 264

Oil Mills

Two Aleppo oil mills have private power plants, the larger with a capacity of 1,200 KW, the smaller with 300 KW. These factories work only about 150 days per year (say six days per week during six months). With one-third of the capacity in reserve and an assumed load factor as low as 10% the power generated per year would be about 1.5 million KWH. 377 388

Flour Mill

A flour mill in Aleppo has a 400-KW plant. With a utilization of two-thirds of the capacity for 6,000 hours the power generated would be about 1.2 million KWH. 377 256

Sugar

In 1953 the Homs sugar factory processed 7,000 tons of sugar from beets and refined 22,000 tons from raw sugar. Power required for the former 377 257

PRODUCTION

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مساحات ومحاصيل اهم انواع الخضار ١٩٥١/١٩٥٠ - ١٩٥٢/١٩٥٢
(المساحة بالهكتار والمحصول بالطن)

AREA AND PRODUCTION OF PRINCIPAL VEGETABLES, 1950/51 — 1952/53.
(Area in hectars, produce in tons)

Table No. 5 جدول رقم ٥

Vegetables	١٩٥١/١٩٥٠ 1950/1951		١٩٥٢/١٩٥١ 1951/1952		١٩٥٣/١٩٥٢ 1952/1953		النوع
	المساحة Area	المحصول Produce	المساحة Area	المحصول Produce	المساحة Area	المحصول Produce	
Potatoes	3,687	36,815	3,887	38,226	3,058	32,294	بطاطا
Garlic	1,144	4,548	986	4,018	1,185	4,326	ثوم
Onions	4,043	39,745	4,169	33,135	4,454	36,830	بصل
Onion seeds	228	388	202	52	210	42	بادرون
Onion sets	635	1,136	721	2,299	749	3,667	فرخ
Tomatoes	6,338	67,438	7,655	66,733	6,841	71,038	بندورة
Eggplant	2,742	34,996	3,670	34,905	3,728	28,403	باذنجان

مساحات ومحاصيل النباتات الصناعية ١٩٥١/١٩٥٠ - ١٩٥٢/١٩٥٢
(المساحة بالهكتار والمحصول بالطن)

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AREA AND PRODUCTION OF INDUSTRIAL CORPS, 1950/51 — 1952/53.
(Area in hectars, produce in tons)

Table No. 6 جدول رقم ٦

Plantation	١٩٥١/١٩٥٠ 1950/1951		١٩٥٢/١٩٥١ 1951/1952		١٩٥٣/١٩٥٢ 1952/1953		النوع
	المساحة Area	المحصول Produce	المساحة Area	المحصول Produce	المساحة Area	المحصول Produce	
Sugar cane	86	349	119	5,033	138	4,080	قصب السكر
Tobacco	4,026	4,164	3,951	3,894	2,062	1,669	تبغ
Tombac	391	381	385	362	317	253	تنباك
Cotton	217,382	62,924	189,271	58,074	127,558	46,984	قطن (شعر)
Linseed	180	180	220	220	532	533	كتان (بزر)
Hemp	3,330	3,383	4,293	4,131	4,038	2,172	قنب (الياف)
Tobacco (shak-el-bint)	3,936	3,090	3,296	2,334	3,309	2,820	تبغ شاك البنت
Sugar beet	211	2,715	2,624	55,320	4,264	49,572	الشوندر السكري

الانتاج

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مساحة ومحصول القطن الشعر في سوريا حسب المحافظات ، ١٩٥٠ ـ ١٩٥٣
(المساحة بالهكتار والمحصول بالطن)

AREA AND PRODUCTION OF COTTON FIBRE IN SYRIA, BY MOHAFAZAT, 1950 — 1953
(Area in hectars, produce in tons)

Table No. 7

جدول رقم ٧

Mohafazat	١٩٥٠ 1950		١٩٥١ 1951		١٩٥٢ 1952		١٩٥٣ 1953		المحافظات
	المساحة Area	المحصول Produce	المساحة Area	المساحة Produce	المساحة Area	المحصول Produce	المساحة Area	المحصول Produce	
Total	**77,961**	**35,495**	**217,352**	**62,924**	**189,271**	**58,074**	**127,558**	**46,984**	المجموع
Damascus	166	84	4,861	693	2,283	288	197	124	دمشق
Homs	2,000	805	8,800	3,201	6,900	2,205	3,180	1,650	حمص
Hama	14,500	7,700	34,635	10,959	42,856	9,573	45,960	10,015	حماة
Latakia	8,091	2,800	27,457	5,462	14,150	3,384	2,438	496	اللاذقية
Aleppo	40,889	16,746	79,357	29,612	90,393	31,693	46,774	11,781	حلب
Al-Hassakeh	6,110	3,500	22,924	2,515	20,031	7,432	10,098	5,668	الحسكة
Deir-ez-Zor	6,100	3,815	36,000	9,867	8,837	3,348	14,800	7,965	دير الزور
Suweida	—	—	7	3	400	14	—	—	السويداء
Dar'a	105	45	3,311	612	3,421	137	1,091	285	درعا

Source : Ministry of Agriculture

المصدر : وزارة الزراعة

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مساحة ومحصول القطن الزهر في عام ١٩٥٣ ، حسب المحافظات
(المساحة بالهكتار والمحصول بالطن)

AREA AND PRODUCTION OF UNGINNED COTTON IN 1953, BY MOHAFAZAT
(Area in hectars and Production in tons)

Table No. 8 — جدول رقم ٨

Mohafazat	المساحة المزروعة Cultivated Area			المحصول (زهر (شعر وبذور) Produce (unginned			المحافظات
	الجموع Total	سقي Irrigated	بعل Non-irrigated	الجموع Total	سقي Irrigated	بعل Non-irrigated	
Total	**127,558**	**76,305**	**51,253**	**126,026**	**107,689**	**18,337**	المجموع
Damascus	197	197	—	331	331	—	دمشق
Homs	3,180	2,945	235	4,404	4,287	117	حمص
Hama	48,980	30,740	18,240	50,888	46,352	4,536	حماة
Latakia	2,438	163	2,275	1,373	141	1,232	اللاذقية
Aleppo	46,774	16,371	30,403	31,911	19,529	12,382	حلب
Hasakeh	10,098	10,058	40	15,115	15,087	28	الحسكة
Deir-ez-Zor	14,300	14,300	—	21,240	21,240	—	دير الزور
Sweida	—	—	—	—	—	—	السويداء
Dir'a	1,091	1,031	60	764	722	42	درعا

عدد الحيوانات والمواشي ، ١٩٥٠ — ١٩٥٣
NUMBER OF ANIMALS AND CATTLE, 1950 — 1953

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Table No. 9 — جدول رقم ٩

Animals and cattle	١٩٥٠ 1950	١٩٥١ 1951	١٩٥٢ 1952	١٩٥٣ 1953	النوع
Cows, not for milking	109,935	294,425	252,081	253,801	مجموع البقر غير الحلوب
Cows, for milking	121,735				بقر حلوب
Oxen	197,583	183,080	189,997	251,485	ثيران
Horses	97,070	99,650	100,854	98,450	خيل
Mules	58,202	70,425	73,890	77,810	بغال
Asses	271,047	244,270	250,433	259,730	حمير
Sheep	2,930,397	3,085,235	3,559,748	3,746,392	غنم
Goats	1,229,738	1,433,501	1,571,262	1,613,806	معز
Camels	78,051	70,889	96,610	61,706	جمال
Buffalo	6,755	6,030	6,176	6,779	جاموس
Pigs	962	421	206	393	خنازير
Beehives	53,255	...	...	...	خلايا نحل

Source : Ministry of Agriculture — المصدر : وزارة الزراعة

3:Royal Institute of International Affairs U-4 (no date)1954 M1 Middle East
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cultivated area. Holdings of 25–250 acres are estimated to take up 33 per cent of the area and holdings over 250 acres 29 per cent. State land is estimated to represent 23 per cent of the total cultivated area. Decrees for the distribution of state lands were issued in 1952: their implementation, at the time of writing, is still under review. Legislation to prevent the subdivision of plots by succession inheritances is also under consideration; at present a four-acre plot may have thirty-seven owners, and its management is profitable only to lawyers.

The approximate acreage and crop and yield of the main products are shown in the following table.

MAIN CROPS

	Area (000 hectares)			*Production* (000 metric tons)			*Yield* (100 kg. per ha.)	
	1950	*1951*	*1952*	*1950*	*1951*	*1952*	*1950*	*1951*
Cotton (lint)	78	217	142	35	49	49	4·6	2·3
Wheat	992	1,037	900*	830	510	850*	8·4	4·9
Barley	416	344	400*	322	135	350*	7·7	4·5
Vegetables	68	66	..	47	40	142	..	..
Tobacco†	10	11	..	9	9	..	8·7	..
Rice (paddy)	7	..	..	24	6	6	19·3‡	..

.. = not available.

* The Banque de Syrie et du Liban (*Exercice 1952*) quotes the following figures for 1952 (in thousands):

Wheat: area = 1,180, production = 805.
Barley: area = 396, production = 467.

† Including Lebanon (annual production about 2,000–3,000 tons). ‡ 1949.

(Sources: FAO, *Yearbook of Food and Agricultural Statistics, 1952* and *Monthly Bulletins of Statistics*, 1953; vegetable figures from Banque de Syrie et du Liban, *Exercice 1952*, Paris, 1953.)

Wheat is the traditional staple crop of Syria and in a normal year a quarter of a million tons can be exported. But the poor harvest of 1951 necessitated wheat imports of about 50,000 tons. The 1952 wheat crop, however, once more increased to over 800,000 tons. Barley is also grown and exported and, though the acreage has diminished somewhat since 1949, the crop is adequate.

In 1950 fortunes were made from cotton which fetched a high price for the abundant harvest. The acreage sown to cotton trebled between 1949 and 1950 and again in 1951. But while in 1950 the cotton yield was high, the 1951 harvest proved disappointing because of drought and attacks of the boll weevil. Despite a fall in cotton acreage in 1952—due chiefly to the downward trend in cotton prices—that year's output was maintained at the 1951 level, thanks largely to better methods

3:Royal Institute of International Affairs U-4 (no date)1964 M1 Middle East
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248 433 of cultivation. Syrian cotton is a 'Lone Star' medium-staple variety and is of better quality than is needed for some locally-made clothes, which accounts for the fact that Syria both exports and imports cotton. There is still a long way to go before the country's cotton cultivation is as efficient as in Egypt or the Sudan, but cotton has become Syria's most important export commodity and the cotton acreage increased by no less than 800 per cent between 1945 and 1951, compared with an increase of 60 per cent and 70 per cent in Egypt and the Sudan.

241 433 Both 1951 and 1952 were bad years for olives; in the north, thousands of trees have been blighted by frost. Syria produces good fruit, especially in the oasis of Damascus, and peaches, apples, figs, plums, pears, grapes, apricots, and pistachio nuts are all grown. The most prolific vegetable crops are lentils, beans, and peas. The area under rice has been reduced by drainage schemes and Syria does not grow enough for her own needs. The famous tobacco of Latakia is grown under a monopoly which has recently been transferred from the concessionary company to the state. Silk and hemp are also cultivated and a start has been made in growing beet for the Homs sugar refinery.

231 439 234 Nearly 3 million sheep are estimated to graze in Syria with goats numbering over a million. Over 7,000 tons a year of coarse wool are exported, including about 2,000 tons a year suitable for rug-making. Cattle are of two types and, in 1950, numbered about 429,000.[1] Yoghurt and cheese and milk are consumed within the country. It is estimated that there are still over 72,000 camels in Syria and they are an important part of nomad economy. The Syrian horse and mule are still bred but in declining numbers.

185 The forests of Syria, as of the Mediterranean in general, are a survival from a period of greater rainfall coeval with the last glacial period of northern Europe. The woodcutter and the goat, war and erosion have taken their toll and trees are no longer an important part of Syrian wealth. An effort at re-afforestation is being made, and there is also a project to produce reeds for paper-making on the banks of the Euphrates.

Industry and Commerce[2]

377 In 1951 the output of electric energy was over 86 million kilowatt hours used mostly in Aleppo and Damascus. New

[1] *Statistical Abstract of Syria, 1951–2* (Damascus, 1952).
[2] For further details, see UN, Dept. of Economic Affairs, *Review of Economic Conditions in the Middle East, 1951–2*.

29:Dunn S-4 (1952)1952 MI Middle East
Syria MDI

COTTON IN SYRIA

in New York. The Foundation is engaged in research and education along the same general lines as in Iran, Lebanon, and Greece. With a small budget the Foundation has in its research learned many practical and useful ways of improving agricultural production. The methods they have devised in teaching simple home economics, such as canning, and principles of sanitation are exemplary. As a result, many villages in the area in which the Foundation operates have bought sewing machines and pressure cookers either with their own funds or with money given by the landlords. Particularly impressive is the practical nature of the work and the absence of a large administrative budget.

COTTON

Statistics on the area planted to cotton are also of questionable accuracy. For what they are worth, the figures show that cotton acreage declined almost 50 per cent from a prewar average of about 85,000 acres. It increased to about 60,000 acres during the five years after the war, and, with high prices, expanded further to almost 200,000 acres in 1950-51 and to about 450,000 acres in 1951-52. In 1952-53 it is expected acreage will be down, possibly just above the 1950-51 level.

Table 24

SYRIA: Statistics on Cotton Production and Distribution
Specified Years, 1920-1951

Year Beginning August 1	Acreage	Yield per Acre	Production	Consumption	Exports
	Acres	Pounds	Bales		
Average 1920-24	NA	NA	4,700	NA	NA
Average 1925-29	58,825	82	9,951	NA	NA
Average 1930-34	42,250	116	10,190	NA	NA
Average 1935-39	85,477	157	28,022	NA	NA
Average 1940-44	47,445	152	15,390	NA	NA
Average 1945-49	58,876	254	31,111	23,100[1]	NA
1950	192,642	466	163,039	31,700	135,000
1951	450,000	220	206,661	33,400	139,000[2]

[1] Average for 1947-49.
[2] Exports September 1, 1951, through May 15, 1952.
Source: Office of Foreign Agricultural Relations, United States Department of Agriculture.

YIELDS

Average yield figures are even more conjectural than acreage. The government's records indicate that the average yield increased from about 160 pounds in 1935-39 to better than half a bale in 1944-49 and to more than 400 pounds per acre in 1949-50 and 1950-51. Because of the large number of inexperienced cultivators, cold weather in the spring, lack of moisture and inadequate irrigation, and heavy insect damage, the 1951-52 yields were poor everywhere and the national average dropped to about 220 pounds per acre. Farmers in the new mechanized area of the Jezira reported losing 90 per cent of their crop. There is no doubt that cotton yields have been erratic.

VARIETIES

Lone Star was the only American Upland variety planted until Coker and Acala seeds were imported in recent years. These have produced good

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248 242 yields. The local experiment stations are doing a limited amount of work in variety selections and testing but have not been able to distribute any large quantity of certified seed. Most of the seed planted is imported directly from United States breeders or seed distributors.

CULTURAL PRACTICES

248 [407] A high percentage of the cotton land is now prepared with mechanical equipment, although a few primitive ploughs are still found. Some cotton is broadcast but for the most part it is planted in ridges. Planting is largely a hand operation in which the farmer digs a hole with a small hand tool and drops in five to seven seeds which have been soaked overnight to soften the shell and increase germination. The rows usually run east and west with the cotton planted on the south side for greater protection. Cultivation is almost entirely by hand with short-handle hoes or knives. Picking, as everywhere, is a family affair. Outside labor usually is required, especially on the large farms, to weed and harvest the crop.

Irrigation practices vary considerably. In general, farmers try to use as much water as they can. The use of commercial fertilizers, although increasing, is limited. Whenever possible manure mixed with soil is added to the cotton land.

On the Near East Foundation experimental farm, yields of 800 pounds of lint per acre were obtained by applying 30 inches of water to supplement the 12 inches of winter rain and 4 square meters of local manure per acre. The fields were prepared with tractors, but the cotton was planted and cultivated by hand. The rows were standard, about 36 inches wide, and three seeds were planted in the hills 12 inches apart. This is ample proof that cotton will grow well and give high yields with good cultural practices.

The Foundation's work also illustrates the need for research in cultural practices, irrigation, and especially fertilization. The soils generally need nitrogen, phosphorus, and potassium, but demonstrations reveal that the soil will react to certain of these plant foods but not to others. For instance, no difference in yields has been noticed from the use of super-phosphates. More research is needed, not only to determine optimum rates of application, but also to determine whether the absorption rates can be increased by conditioning the soil.

GINNING

248 407 Prior to 1950 all the cotton gins were of the roller type, many of which were manufactured locally. One modern American saw gin was installed in 1950 and it proved so successful that 26 more, with 82 stands, have been put into use since. Most of these are located in the Aleppo region. The new gins are, for the most part, equipped with the most modern overhead cleaning units and with standard gin presses. Buildings are unusually lavish. Investment in the average four-stand gin is estimated at $175,000 of which $120,000 is in the land and buildings. Even so, the cost of ginning is fairly moderate, about $9 per bale including bagging and ties.

About 1,700 roller gins are still in operation, three-fourths of them in Aleppo and most of the others in Hama and Latakia with a capacity double that of the saw gins.

The new saw gins still have a number of difficulties to overcome. The opinion persists that saw gins do not give fibers as long as roller gins, cause

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COTTON IN SYRIA

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Cotton bought in small lots from many farmers in various sections is thoroughly mixed in seed cotton storage bins in Aleppo, Syria, before ginning to get uniformity in the bale.

more neps, and often damage the fibers. Also, farmers have not been able to secure any higher price for their saw ginned cotton with less trash, but several dealers in Aleppo reported sales of saw ginned cotton at a premium, indicating that the market situation may be changing.

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Whereas formerly ginners took the seed to cover the cost of ginning, with the increased value of the seed, ginners now are required to operate on a service basis for a fixed charge.

MARKETING

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The concentration of ginning equipment in a few large towns creates a difficult and expensive transportation problem for the farmers in remote areas. Because of the distance to the gins, many farmers are forced to sell cotton in the seed to merchants or middlemen in the local communities. Merchants gin the cotton for their own account and then dispose of the lint and the seed. Most of the gins are owned by merchants, but by no means do all merchants own gins.

Aleppo is the cotton merchandising center, with 47 exporters operating in this market in 1951. About half a dozen merchants, of whom two or three do a small export business, operate in Damascus. More than half of all the exports are sold through the three leading firms; the others do a small volume of business largely as a sideline.

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COTTON IN THE MIDDLE EAST

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CLASSIFICATION

Seed cotton is bought on three grades: good, medium, and low. On taking delivery the ginner inspects the seed cotton for grade and staple and directs it to storage houses adjoining the gins where an attempt is made to sort into grades and to mix the lots thoroughly before ginning.

Lint cotton normally is sold on a basis of four grades: No. 1, corresponding roughly to good middling; No. 2, strict middling; No. 3, middling; and No. 4, low middling. In normal seasons, three-fourths of the crop grades middling and above. Export sales usually are made on the basis of sealed samples or types, and some exporters will have as many as eight different types.

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Table 25

SYRIA: Cotton Exports by Principal Destinations
September 1, 1951, through May 15, 1952

Country of Destination	Exports	Per Cent of Total
	Bales	Per Cent
France	66,990	48.1
United Kingdom	25,260	17.6
Italy	9,095	6.5
Spain	4,480	3.2
Poland	2,625	1.9
Germany	2,230	1.6
Belgium	650	.5
Sweden	510	.4
Netherlands	311	.2
Others	35	
Total	139,184	100.0

SOURCE: Trade Reports.

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PRICES

During the period of world scarcity in 1950-51, prices of Syrian cotton on the local market advanced steadily to a high of slightly over 70 cents per pound. Export quotations were even higher. Prices declined during the 1951-52 season from approximately 50 cents a pound to 33 cents in the spring. Subsequently, the price firmed somewhat and during the summer cotton was selling in Europe for approximately the price of United States cotton on a dollar exchange basis. Syrian cottons, however, have been sold for soft currencies, and the discount must be taken into consideration.

Prices between grade 1 and grade 4 vary about 12 per cent.

Various producers expressed the view that a world price of about 30 cents a pound would be attractive to Syrian farmers and probably would stimulate further expansion. A world price much below this level, on the other hand, likely would discourage production.

A series of studies made by a large foreign firm interested in investing capital in cotton production and processing in Syria found that cost of production was below 20 cents per pound when normal yields were obtained but was much higher in poor years, such as 1951-52.

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COTTON IN SYRIA

Table 26

SYRIA: Estimated Cost of Producing Cotton in the Upper Euphrates Valley on a Typical Tenant Cultivator Farm 1950

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Cost Items	Cost per Acre
	Dollars
Land preparation and planting	10.00
Seed	2.07
Irrigation (fuel and amortization of engines and pumps)	10.00
Cultivation	4.22
Supervisor's salary	2.72
Harvesting	10.24
Miscellaneous	3.17
Total tenant's cost at plantation	34.47
Tenant's transportation cost to Aleppo	2.76
Tenant's ginning cost at $9 per bale	7.74
Tenant's cost for the ginned cotton from one acre	47.95
Estimated Yield per acre — 616 pounds of lint cotton per acre	
Rent at one-third of crop — 205 " " " " " "	
Tenant's share of lint — 411 pounds	
Estimated Yield per acre — 1,144 pounds of seed	
Rent at one-third of crop — 381 " " "	
Tenant's share of seed — 763 " " "	
Tenant's cost of ginned cotton	$47.95
Less credit for tenant's share of seed at $44 per ton	24.42
Tenant's net cost of ginned cotton	$43.53
Tenant's net cost of ginned cotton divided by pounds: or $\frac{\$43.53}{411}$ equals 10.59¢ net cost per pound	

[427]

Note: This is a plantation with 250 acres of cotton grown under irrigation in the Upper Euphrates Valley. The landlord gets one-third of the seed cotton at the plantation for land rent. The tenant pays transportation and ginning cost only on his share of the production.

Source: Trade sources.

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COTTONSEED OIL

Nine crushing mills have a total capacity for approximately 500,000 tons of seed annually. Only four of these are primarily cottonseed oil mills—two in Aleppo, one in Damascus, and one in Hama. Capacity is adequate and prices slightly higher than those in the foreign markets, so most of the seed is now crushed in Syria. However, the extraction rate is low, especially in the older mills, and 1951 cottonseed oil production was given as only 5,000 tons. This represents about 40 per cent of the total vegetable oil produced in the country, the remainder being largely olive oil. Approximately 85 per cent of the cottonseed oil cake is consumed domestically as stock feed, with the other 15 per cent exported.

INSECTS

The principal cotton destroying insects are the spiney bollworm, *Earias insulana* (Boisd.), and the locust. Last year the plant protection department of the Ministry of Agriculture distributed 250 tons of benzine hexachloride and farmers purchased 150 tons directly from dealers. Even so, yields were only half what they were reported to be the previous year and farmers at-

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242 tributed a 50 per cent decline in yields to insect damage.

248 In an effort to reduce this damage, the Ministry has employed an Egyptian entomologist and has bought 4,000 tons of insecticides and a large number of tractor-mounted, horse-drawn, and walking dusting units.

[656] The Ministry also has promulgated numerous regulations for controlling insects, calling for mandatory destruction of stalks after harvesting and a host-free period until May 1. All ginning must be completed by the end of April and all the gin trash burned. Planting seed must be sterilized by one of the oil mills through contract with the government. The government also requires all farmers to apply the recommended insecticides. If farmers do not comply, the government applies the poison and charges them for it.

CONTROLS

656 The government has appointed a Cotton Control Board, with head-
647 quarters in Aleppo, charged with the broad responsibility of stabilizing pro-
248 duction. The board is responsible for the enforcement of programs in seed distribution, insect control, crop control, ginning and marketing, and new regulations promulgated recently by the Ministry.

Probably the most significant of these many regulations is one limiting the land which may be planted to cotton. In irrigated areas from 40 to 70 per cent of the crop land may be planted to cotton and in dry-land farming areas, only 25 to 33 per cent. The Aleppo area is limited to 50 per cent of the non-irrigated land. The purposes of this regulation, according to the Director General of Agriculture, are to preserve a balance in agricultural

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Syria's newest cotton mill is an ultra modern integrated plant just completed in Damascus. The level of efficiency here is far above the average and as a result this mill is exporting about 20 per cent of its production.

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COTTON IN SYRIA

production, conserve water, concentrate cotton so as to facilitate insect control, and protect the cotton industry against the high costs and low prices that might result from over-extension of production. Farmers are required also to receive licenses to plant cotton from the local representatives of the Ministry of Agriculture and the Cotton Board.

The only marketing regulations issued to date require that all bales show the name of the ginner, the identity, and especially the moisture content of the cotton, which cannot be more than 9 per cent. If false claims are made, the government can take 30 per cent of the cotton as a penalty.

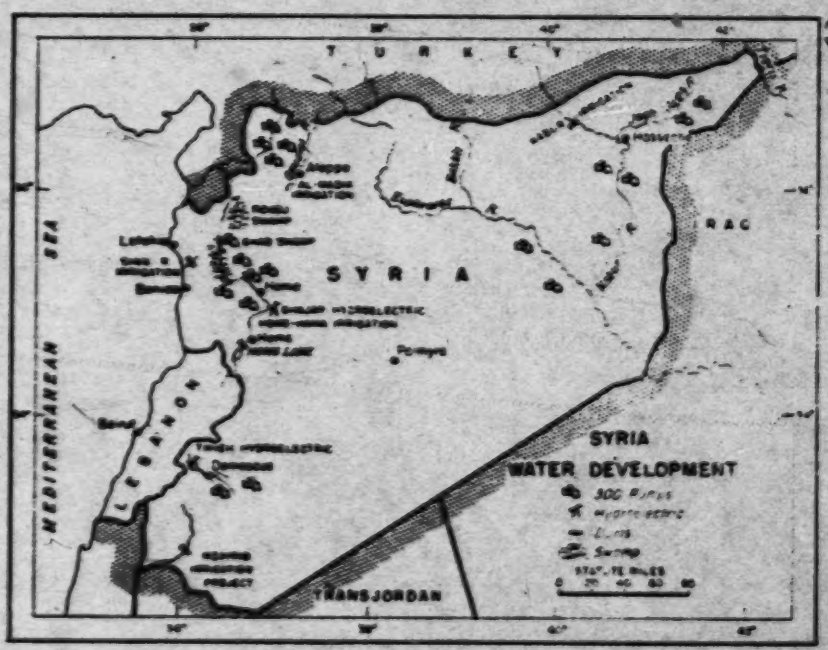
It is obvious that the enforcement of so many scientific regulations and controls over a large area is going to be difficult without a large force of trained technicians and police.

The Director General appreciates that without adequate trained personnel it is not possible to make the regulations completely effective overnight, but he hopes, through education, to obtain the compliance of the producers.

Ambitious research and education programs, another responsibility of the board, are still in the planning stage.

PROSPECTS

It appears unlikely to expect any significant expansion in production in Syria until yields can be stabilized. A start has been made, but a more intensive research and education program is required on cultural practices (particularly irrigation practices), mechanization, and especially insect control, before much improvement can be expected. Such efforts naturally take considerable time, even when funds and technical assistance are available. Both money and know-how are limited in Syria.



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COTTON IN THE MIDDLE EAST

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Cotton acreage may actually decline from the peak until these improvements are made. But production may hold at recent levels or even expand slightly under a more intensive farming system.

Unless prices soar again a crop of more than 250,000 to 300,000 bales does not appear to be likely for several years.

On the basis of land and water resources, the goal of 1 million bales of which some Syrian agriculturists dream may be attained in time, but not soon. The time and cost of building the large new irrigation facilities that would be required provide severe limitations to quick expansion.